

Name: _____

Date: _____

A2 CC-1 Solving Exponential Equations with Variables in the Exponents

Do Now:

Please fill in the blank space with $>$, $<$, or $=$

1. 4^6 16^3

2. 9^5 27^3

3. 25^4 125^3

Classwork:

Solve for x .

1. $2^{x+3} = 64$

2. $9^{2x} = 3^{3x+1}$

3. $4^x = 2^{3x+1}$

4. $27^x = 9^{2x-1}$

5. $9^{x+5} = 81^{2x+1}$

6. $4^{3x} = 8^{x+1}$

$$7. \ 25^{x-2} = 125^{x-2}$$

$$8. \ \left(\frac{1}{2}\right)^x = 4$$

$$9. \ 5^{4x+2} = 1$$

$$10. \ \frac{1}{2^x} = 32$$

$$11. \ 9^{2x+2} = 243$$

$$12. \ 2^{2x+2} - 8^{x+2} = 0$$

$$13. \ \left(\frac{9}{16}\right)^x = \frac{27}{64}$$

$$14. \ \left(\frac{27}{8}\right)^x = \left(\frac{9}{4}\right)$$

$$15. \ 16^{x-2} = \left(\frac{1}{8}\right)^x$$